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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/728,932      | 12/08/2003  | Toshimitsu Konuma    | 0756-7221           | 9654             |

31780 7590 09/20/2006

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EXAMINER

NGO, HUYEN LE

ART UNIT PAPER NUMBER

2871

DATE MAILED: 09/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/728,932

Applicant(s)

TOSHIMITSU KONUMA

Examiner

Julie-Huyen L. Ngo

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 June 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 5-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ohkubo et al. (US4878742) in view of Kanemoto et al. (US5250214A).

With respect to claims 6, 10-12, 16-17, 21-24 and 27-28, Ohkubo et al. teach (Figs. 1-2) forming a display device comprising:

- a pair of substrates 11/11'.
- a liquid crystal layer 16" provided between said pair of substrates and comprising a nematic liquid crystal having positive dielectric anisotropy (col. 3, lines 58-59 and col. 7 lines 34-35);
- a pair of orientation films 14/14' provided adjacent to and between said pair of substrates respectively and having anti-parallel orientation directions to each other (col. 9, lines 14-18);

wherein

- spacing between said substrates is  $3.0\mu\text{m}$ , which is less than  $3.5\mu\text{m}$  (col. 9, line 14 to col. 10, line 13)

(Claims 7, 13, 18 and 24)

- each of said orientation films comprises a polyimide (col. 9, lines 14-18).

(Claims 9, 15, 20 and 26)

- a first electrode 13 provided over one of said substrates; and a second electrode 13' provided over the other of said substrates

However, Ohkubo et al. fail to teach forming the orientation films with a surface tension of 40 dyne/cm or more; and form their device as a reflective-type display device.

(Claims 8, 14, 19 and 25)

It is well known in the art for a display device to be formed as a reflective-type display device by having a reflection layer formed on surface of lower substrate for reflecting ambient light. Doing so would reduce power consumption and having a brighter display.

Therefore, it would have been obvious for one having ordinary skill in the art to form Ohkubo display with a reflection layer on a surface of the lower substrate for reflecting ambient light. Doing so would reduce power consumption and having a brighter display.

With respect to the surface tension of the orientation films, Kanemoto et al. teach (col. 26, lines 53-64) forming the orientation film with a surface tension of not smaller than 40 dyne/cm for spreading the LC polymer in its LC phase uniformly on a coated surface of an orientation film.

Therefore, it would have been obvious for one having ordinary skill in the art to modify Ohkubo et al. display device with orientation films having a surface tension of 40

Art Unit: 2871

dyne/cm or more for spreading the LC polymer in its LC phase uniformly on a coated surface of the orientation films, as taught by Kanemoto et al.

***Response to Arguments***

Applicant's arguments filed on June 12, 2006 with respect to the rejection(s) of claim(s) 6-22 under Kanemoto et al in view of Ohkubo et al, and with respect to newly added claims 23-28 (with same scope of the previously presented claims) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection under the same references of Ohkubo et al. (US4878742) in view of Kanemoto et al. (US5250214A).

***Contact Information***

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Julie-Huyen L. Ngo whose telephone number is (571) 272-2295. The Examiner can normally be reached on M-Thursday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. David Nelms can be reached at (571) 272-1787.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1562.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 2871

For more information about the PAIR system, see <http://pair-direct.uspto.gov>.

Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

September 18, 2006

A handwritten signature in black ink, appearing to read 'huyen', with a long, sweeping horizontal line extending to the right.

**Julie -Huyen L. Ngo**  
**Primary Examiner**  
Art Unit 2871